TRANSACTIONS

OF THE

PHILADELPHIA ACADEMY OF SURGERY.

Stated Meeting, March 7, 1904.

The President, HENRY R. WHARTON, M.D., in the Chair.

THE ADVANTAGES OF ABDOMINAL OVER VAGINAL HYSTERECTOMY IN CARCINOMA.

DR. JOHN B. DEAVER said that he saw a large number of cases of uterine carcinoma each year, many of which have passed beyond the stage for operation. Unfortunately, many of the subjects of this disease suffer from symptoms not at all well defined, are free from pain, and have but little discharge until the growth has become so extensive as to forbid radical interference; for this reason the family doctor is often unaware of the real nature of the disease until it is too late to resort to surgical interference.

Irregular bleedings from the uterus, whether before, during, or after the menopause, should excite the apprehension of the general practitioner, as well as the surgeon, to investigate, at any rate. It is absurd to consider feelings of delicacy and allow them to prevent an inspection of the cervix and palpation of the body of the uterus, nor in doubtful cases fear of consequences deter resort to curettage with examination of the scrapings. Negative findings by the pathologist should be accepted with great reserve and not be allowed to controvert unmistakable clinical symptoms, especially in women approaching or past the menopause. He emphasized the latter, because, as is well known, epithelioma rarely begins until after the child-bearing period.

The differentiation between hæmorrhagic endometritis and commencing maligant disease is not always possible; in fact, it is the practice of the writer, in those cases of hæmorrhagic endometritis occurring about the change of life with a large and flabby uterus and family history of malignancy, to make a complete removal of the uterus.

In hæmorrhagic or hypertrophic endometritis with foul-smelling discharge, the uterus should be curetted and the findings examined microscopically. A negative finding does not necessarily prove the absence of carcinoma, as the curette may have escaped the cancer area, or the carcinoma be within the uterine muscle. Excision of a small portion of the uterine tissue for microscopical examination can only be considered where the disease is of the cervix.

The class of cases of carcinoma of the uterus which perplex the surgeon most in determining what is best to do are those which are not seen early; when it is questionable whether the tissues outside the uterus are involved, rendering it difficult to determine even the propriety of radical interference. The most common site of carcinoma of the uterus is the cervix, which is usually squamous-celled, and early in the disease is essentially a local process, hard and indurated, with papillæ elevated from the surface of the mucous membrane. These papillæ increase and enlarge, giving rise to the cauliflower-like growth so often seen; ulceration and necrosis soon follow, implicating the vaginal vault, the broad ligaments, the bladder, and rectum. When the case has assumed this stage radical treatment is, as a matter of course, not to be considered. One of the important questions to be decided in the operation for radical cure of carcinoma, be it situated in the uterus or elsewhere, is, Can the excision of the cancer area be performed by section through normal tissue?

For the relief of the discharge, the bleeding, or the pain in advanced carcinoma of the uterus, local measures, as the curette and cautery, are more efficacious than the use of the knife. The most careful bimanual examination must be made to determine the advisability of radical operation, also must the patient's general condition and the absence of other organic lesion be favorable. The radical operation is, in the speaker's judgment, only to be considered in the early stages of the disease. He had found that the pain consequent upon the recurrence of carcinoma following late and extensive operation is greater than in cases of the kind which have been curetted and cauterized.

The speaker practises and strongly advocates total ablation of the uterus by the abdominal route in early carcinoma of the cervix. He felt sure this operation promised more, both immediately and ultimately, than does the removal by the vaginal route. In the early stages complete removal of the uterus, broad ligaments, and the lymph channels in the latter, with possibly the iliac lymph glands in some cases, should guard against recurrence with reasonable security.

It is interesting to note that Professor Jacobs, of Brussels, one of the earliest advocates of vaginal hysterectomy for cancer of the uterus, has entirely changed his views, and now only does the vaginal operation when the abdominal route is impracticable. Jacobs states that he never has had a case of uterine cancer operated upon by the vaginal route to live more than three years, and that the majority of them were dead at the end of one year. In contrast to this he has a number of cases, upon which he operated by the abdominal route, that are living and well after four years. Jacobs practises the removal of the pelvic glands.

Professor von Rosthorn, of Heidelberg, also practises cleaning out of the glands of the pelvis in carcinoma of the uterus; in fact, this is the common practice at the present time on the Continent. It would seem as reasonable to remove the glands of the pelvis in connection with removal of the uterus in early carcinoma as it does to remove the glands of the armpit in early operation for the removal of cancer of the mammary gland. It scarcely seems necessary to say that this is a useless procedure where there is already systemic involvement. The Halsted operation for carcinoma of the mammary gland, as practised by Dr. Deaver, is only done in the early cases. It is useless to make so extensive a dissection after there is advanced involvement of the axillary, subclavian, and supraclavicular glands. When the latter condition is present, it is evident that the disease has advanced beyond the reach of the surgeon's knife, particularly in the shape of involvement of the intrathoracic glands.

He strongly opposed vaginal hysterectomy in carcinoma of the cervix, except in the presence of obstacles necessitating such a course, for instance, a very stout abdomen, nephritis, etc. Early carcinoma of the fundus of the uterus is the condition in which he practised vaginal hysterectomy, and not in the cases where sufficient time has elapsed to have allowed the lymphatics of the cervix uteri to have become involved.

The vaginal operation in carcinoma of the cervix offers no advantages over abdominal section when the latter is properly performed, and suffers from the charge of being an incomplete procedure, dangerous to the ureters, and liable at any time to be followed by secondary bleeding. The abdominal operation certainly gives the only chance for the proper cleaning of the pelvis, offers greater security against hæmorrhage and less risk of injuring the ureters; the field of operation is kept constantly in view, the patient in the Trendelenburg position, and the intestines kept out of the way of injury and infection by the proper placing of gauze pads. That we can cut farther away from the diseased area in the abdominal than in the vaginal operation, we must admit.

In the abdominal operation, he never had any fear of injuring the ureters if the bladder with the anterior serous flap was carried well forward and upward behind the pubic bone. If the operator is not content with this, it is a simple matter to expose the ureters. The introduction of ureteral catheters or bougies to safeguard the ureters had not been his practice. He had always feared more the consequences of carrying an instrument from the bladder into the ureters and exposing the kidneys and ureters to the danger of infection than injury to the ducts.

He was an advocate of dissection of the lymphatic glands of the pelvis in all cases of carcinoma. He did believe, however, that in certain selected cases this operation is not only feasible, but in order. In this connection he furthermore said that the dissection of the pelvis should be done as readily, the conditions requiring it, as a deep dissection of the neck; the same amount of care in exposing the lesion and the structures in relation therewith, thus avoiding unnecessary mutilation, should be carried out in the same anatomical manner as in the dissection for the removal of an enlarged thyroid gland. This being done, fewer ureters will be injured, fewer cases of secondary hæmorrhage, of postoperative vesical fistula, intestinal fistula, etc., will have to be noted. The individual ligation of vessels of any size as opposed to the mass ligature or the use of that abominable instrument, the angeiotribe, be it the plain or electrical hæmostatic instrument, he strongly urged.

In connection with the discussion of the propriety of the removal of the pelvic lymph glands, it is interesting to note that the lymphatic system of the uterus is composed of a rich network of vessels, those from the vagina and lower portion of the cervix following the uterine vessels to glands at the bifurcation of the common iliac arteries, usually three in number, whence they pass upward. The lymphatics of the body of the uterus anastomose with those of the cervix uteri, travel downward to the deep inguinal glands by way of the round ligaments, and pass through the utero-ovarian ligament, emptying into the lumbar glands. Notwithstanding these abundant lymphatics, carcinoma of the uterus spreads more rapidly by continuity of tissue than through lymphatic metastasis; therefore, the argument in favor of removal of the pelvic glands is weakened. Certainly the only cases that promise anything are those where the glands have not yet become involved. Experience teaches that extension of the cancer downward into the vagina and backward into the rectum is much more common than metastasis into the pelvic glands.

Epithelioma of the vagina has been overlooked as a point of metastasis or implantation, the diseased area resembling so much an excoriation and has been mistaken for such, believed to have occurred in preparation for operation. Early involvement of the bladder may be recognized only by means of a cystoscopic examination.

The technique of the abdominal operation is comparatively simple. The abdomen opened through the right rectus muscle, the contents of the pelvic cavity palpated to determine the presence of adhesions, and if the disease has extended beyond the uterus, the patient is placed in the Trendelenburg position, the intestines and great omentum are protected by gauze pads carefully placed. With the gauze pads properly placed the field of operation in the pelvic cavity is well exposed. Traction is now made upon the fundus of the uterus, drawing it upward and backward, when an incision is carried from the pelvic end of one round ligament to that of the other, and through the serous covering of the anterior surface of the uterus at the point of reflexion of the peritoneum from the uterus on to the bladder. This serous flap is displaced downward, carrying the bladder with it; the dissection is carried as far down as possible, in this wise displacing the bladder upward behind the pelvic bone, thus exposing the anterior wall of the vagina and carrying the ureters out of harm's way. The next step in the operation is tying off the ovarian arteries to the outer or inner side of the ovary or ovaries, depending upon the advisability of removing or leaving them. It is his practice to leave the ovaries in cases of carcinoma occurring in early life. The uterine arteries and veins are next exposed as they pass from the side of the pelvis to the cervix uteri and tied between two ligatures and divided; in making the dissection to expose these vessels the ureters are exposed, and thus rendered less liable to injury. The next step in the operation is cutting the cervix out of the vagina with the removal of the organ. The vaginal walls are now whipped over with a continuous catgut suture, a piece of iodoform gauze placed in the vagina allowing a small portion of it to protrude into the pelvis, when the anterior serous flap is brought over the protruding gauze and stitched to the posterior surface of the vaginal wall or the serous covering of the sigmoid flexure, as the case may be. The gauze pads removed; the intestines and great omentum placed in normal position; the abdominal walls closed with tier suture; the abdominal wound dressed and an aseptic dressing applied to the vulva, and the patient returned to bed. The head of the bed is elevated, unless there are symptoms of temporary shock, when this is not done until the patient has recovered from shock.

In making a vaginal hysterectomy, he preferred to use clamps rather than ligatures.

Dr. William J. Taylor said he agreed in every particular with the statements made by Dr. Deaver. He had performed his last vaginal hysterectomy. In the last patient upon whom he did this operation, for a malignant growth of the uterus, it was followed by infection, with a resulting peritonitis. The peritonitis was followed by embolism and dry gangrene in the right forearm that necessitated amputation above the elbow. The patient left the hospital minus not only her uterus but also her right forearm; this result occurring in spite of the fact that all possible care was used in the operation. It decided Dr. Taylor against further use of the vaginal method.

Dr. Deaver said that Dr. Taylor was fortunate in that his patient did not lose her life. His brother had an experience with a similar condition, but his patient died. She was a large, stout woman, and during the operation her limbs were held by assistants. They did what residents are prone to do,—use the limbs as a hammock and go to sleep,—and as a result of the excessive flexion during a long operation thrombosis, gangrene, and death occurred. The case demonstrated that assistants should be awake.

LOOSE BODY REMOVED FROM THE KNEE-JOINT.

Dr. Henry R. Wharton reported the case of a man, aged fifty years, who was admitted to the Presbyterian Hospital January 19, 1903, with the following history: Early in November he wrenched his right knee, but, although the knee gave him some pain, he was able to continue his work. Shortly after the accident he began to suffer with occasional pain and disability in the right knee, and experienced a sensation as if something had slipped out of the joint upon certain motions of the joint. In December the symptoms became aggravated, so that at times when walking the body slipped out of the joint, produced intense pain, and caused the knee to give away under him, so that he would fall. He became so uncertain in his movements that he was compelled to give up his work. There would often be intervals of several days when he suffered from no displacement of the body.

After his admission to the hospital, upon certain movements of the joint he was able to bring the body out of the joint, so that it could be located, when the joint was flexed, near the inner edge of the patella.

After the body had been located, it was fixed by a needle passed into it through the skin, and a firm compress was also applied above it to prevent its slipping back into the joint. The patient was then anæsthetized and an incision made through the skin over the body, and it was removed. It proved to be a bony body, convex upon one surface, partially covered with cartilage, and about the size of a Lima bean. The wound was closed by two layers of sutures, and the joint fixed by a plaster-of-Paris bandage. The superficial sutures were removed upon the tenth day, and the wound was found healed.

The etiology of loose or movable bodies in the knee-joint is not definitely settled. Their presence is attributed by various authorities to detached synovial fringes, which remain free in the joint; or to detached osteophytes; or to the detachment of portions of bone or cartilage from a wrench or twist of the joint; or the detachment of a portion of the articular surface of the bone or cartilage by a quiet necrosis without suppuration. Fibrous bodies are said to frequently result from the organization of blood-clots following injury of the joint. The body may be entirely loose, or attached by a long or short pedicle. The bodies vary in size from a pea to a body an inch or more in diameter, and may be cartilaginous, fibrous, or bony in structure. The symptoms vary in intensity, and may disappear at intervals, and appear to be due to quiescence or mobility of the body. Fixation of the joint occurs at intervals, as the body occupies certain positions in the joint. Nausea when the body becomes displaced is not an uncommon symptom in many cases. The presence of the body sooner or later causes disability and weakness of the joint from chronic synovitis, with stretching of the ligaments.

The most satisfactory treatment of this affection is the removal of the body by incision. It is wise, however, not to attempt to remove the body unless it can be definitely located, as it may be difficult to find even after an extensive exposure of the knee-joint. The operation, with careful aseptic details, is accompanied by little risk.

DR. JOHN B. ROBERTS said that he once undertook to remove what was thought to be a movable body from the knee-joint and was surprised to find that it was an osteoma or osteophyte on the femur. The fascia slipping over this gave the sensation of a movable body. The treatment for both conditions being the same,—removal,—the mistake in diagnosis was not of importance.

DR. JAMES K. YOUNG mentioned two cases that he recently had seen. One, under the care of Dr. Willard, was in an athlete from whose knee the loose body was taken out in two pieces, the tissue being cartilage. The second case, under his own care, is in a woman of fifty years. In this instance the movable body, which is larger than those usually found, is situated above and internal to the patella. The patient has not as yet been operated upon.

DR. W. BARTON HOPKINS said that he had seen in the laboratory of the Pennsylvania Hospital several loose bodies that recently had been taken from the knee-joints of an aged colored man who died in the medical ward of that institution. The largest concretion measured 6½ by 4½ by 2½ centimetres and weighed fifty-five grammes. The two smaller concretions in the right knee-joint were not measured or weighed. It was mainly fibrocartilage, but had a small bony nucleus.

DR. GEORGE G. ROSS mentioned a case which illustrated a point made by Dr. Wharton regarding the difficulty of securing a loose body that has not been accurately located or anchored before opening the joint. In this instance the body could not be found until the finger was introduced and the joint explored. Fortunately, infection did not follow this manipulation.

FRACTURE OF SPINE, ACCOMPANIED BY AN ENORMOUS PROSTATIC CALCULUS WITH PYONEPHROSIS, AND FINALLY A GUNSHOT FRACTURE OF THE SKULL.

Dr. W. Barton Hopkins presented the following outline of the history of this case:

M. S., aged twenty-eight years (?), born in Germany; was admitted to the late Dr. J. M. Da Costa's ward in Pennsylvania Hospital, January 6, 1899, with pneumonia. The evening of his admission he became wildly delirious, requiring restraint in bed. Later on he succeeded in slipping his straps, jumped out of the window, and fell upon the grass, a distance of fifteen feet.

On being brought back into the hospital he was found to have sustained a fracture of the lower dorsal or upper lumbar vertebra, accompanied by complete paralysis from the waist down. The shock of the injury in conjunction with his serious illness rendered his condition desperate. Note of the physical signs of his chest showed pneumonia of the right lung. His breathing was rapid and shallow and he was much shocked. He slowly reacted, and at the end of a week his general condition having improved, Buck's extension apparatus was applied to both legs and counter-extension to the head; but a fortnight later, there being no benefit from the latter, it was removed.

In six months his general condition had very much improved, but the paralysis remained unchanged.

Having had occasional attacks of hæmaturia, the presence of vesical calculus was detected about this time. From then on the urine contained blood and pus, varying in quantity but always present. About this time (1901) the patient was able to sit up in a wheel-chair, thus relieving the pressure over the bed-sores which were present. His flesh was good and he was strong and able in his upper extremities. A pair of adjustable crutches was applied to the chair so that he could elevate and lower them, and thus take more or less weight off of his buttocks. In this way not only were the bed-sores made to heal, but his ability was much increased to wheel himself out of doors, and thus obtain exercise and fresh air.

His mental state was generally quiet and contented. The stone which was thought to be vesical, but proved post-mortem to be prostatic, had increased enormously in size, and the urine contained large quantities of pus, but he obstinately declined to be relieved by operation.

January 26, 1904, his stomach gave out, and this apparently being the last straw, he became hopelessly despondent, and four days later, obtaining a pistol, shot himself in the right temple and died in about ten minutes.

An autopsy was made January 30, 1904, by Dr. Longcope, who has furnished the following notes:

The body is that of a young man 163 centimetres in length. Rigor mortis absent. Body still warm. There is very slight post-mortem discoloration over back and shoulders. Pupils equal and dilated. The upper extremities, neck, and thorax show a moderate grade of muscular development. Below the umbilicus there is extreme emaciation of all the muscles. The pelvis and lower extremities are almost literally skin and bones. The abdomen is scaphoid, and the anterior superior spines of ilium stand up prominently. The circumference of the middle portion of right thigh is seventeen centimetres; on the left side it is seventeen and one-half centimetres; about the middle portion of right tibia, fifteen and one-half, and left, fifteen centimetres. The feet are in talipes equinovarus position. There is no œdema of lower extremities. Penis is small. There is a narrow band covered with skin which goes from prepuce to glans on dorsal aspect of penis. Over the tuber ischii there are purple splotches, and over the sacrum the skin in places shows shallow ulcerations.

In the right temporal region, six centimetres above the zygoma and in a line with the middle of this bone, the hair for an area of two and one-half centimetres across is matted with blood. Around the margin the hair is singed. The tip of the ear is blackened, and there are black marks at the outside of the supraorbital ridge. In the centre of the area where the hair is clotted with blood a small, ragged, round hole one-half a centimetre in diameter is found in the scalp.

Muscles are pale.

Abdominal Cavity. The omentum is pale, delicate, and has very little fat, but covers the intestinal surfaces well. Peritoneal surfaces are smooth and glistening. Appendix measures twelve centimetres in length, lies behind the cæcum, and is patent throughout.

Thorax. Lungs collapse upon removal of sternum. On left side the lung is bound down to thoracic wall by old fibrous cobweb adhesions. On the right side the pleural cavity is free from fluid and adhesions. Pericardial cavity contains a small amount of clear, straw-colored fluid; serous surfaces are everywhere smooth and glistening.

Heart. Weight, 200 grammes. The heart is of medium size; epicardium everywhere smooth and glistening and contains some fat. The right side is distended with firm red and white postmortem clots. All the valves are thin, delicate, and normal. The endocardium is slightly thickened over left ventricle. The heart muscle is firm and brownish gray in color. Left ventricular wall averages from ten to fifteen millimetres in thickness. The aorta shows some slight sclerosis. Walls of coronary arteries are thickened, but the arteries are patulous.

Lungs. The left lung is rather small, soft, and crepitant throughout. The surface is dark purplish blue mottled with black. On section, the cut surface is everywhere pale pink, soft, and crepitant. Bronchi at the root contain a small amount of mucus. Vessels are clear. The posterior part of pleura is covered with old fibrous adhesions.

The right lung is exactly like the left, the pleura being everywhere smooth and glistening.

Spleen. Weight, 190 grammes. Size, 13 by 8 by 5 centimetres. The capsule is delicate, smooth, and free from adhesions. The color is dark purplish brown. Consistency not decreased. On section, the cut surface is smooth, somewhat mottled brown, and red. Malpighian bodies are of medium size. Trabeculæ are not increased.

Liver. Weight, 1220 grammes. Size, 21 by 17 by 9 centimetres. The liver is rather small, not increased in consistency, regular, smooth, and dark purplish brown in color. The capsule is free from adhesions. On section, the cut surface is smooth and brownish in color. Lobules are fairly well marked, their centres are small and reddish. Portal connective tissue not increased. Bile ducts patent. Gall-bladder apparently normal.

Urinary bladder, ureters, and kidneys removed together. While the bladder is being removed, a large concretion escapes from the prostatic portion of urethra which has been cut through. On opening the urethra and bladder the solid portion of prostate has entirely disappeared; instead of a gland there is a large, thin-walled sac which contained the concretion, and apparently surrounded it completely.

The stone is rather soft and crumbling.

It is quite regular in shape and looks as if moulded into the form of a large prostate. It is divided into three or four more or less well-defined lobes and presents a general heart shape, the apex pointing towards the neck of the bladder. On the under surface there is a rounded depression about one centimetre in diameter, into which fits the verumontanum. At the base the stone measures six centimetres in diameter, at apex, three centimetres. It is six centimetres in length and four and one-half centimetres in thickness at the base. At the anterior portion of base there is a rounded mass about two centimetres in diameter. This ends in a round process with a broken end. This process is apparently a cast of the membranous urethra. A second tip-like process extends from the superior lobule into the neck of the bladder. The wall of the sac containing the concretion is gray in color, and is covered with much pus and some mucus. The verumontanum is about the size of a cherry-stone. The ducts leading into the seminal vesicles are patent. Neck of bladder rather small. On opening the bladder the cavity is small, and is entirely filled with a thick, stringy, yellow pus having a rather foul odor. A few masses of calcareous material are also found.

The wall of the bladder is much thickened and the organ is very small; wall measures in places one and one-half centimetres in thickness. The mucous membrane is corrugated, thickened, and red in color. There are some adhesions about the seminal vesicle. Both ureters are distended to the size of one's thumb, and on pressure the ureteral orifices, which are difficult to find, are marked by a spurt of yellowish pus. The intravesicular portion of both ureters is very small and shows some actual constriction, for it is difficult to get even a small probe through the orifice. When the ureters are opened the stricture in the bladder wall is very noticeable, above this the ureters are dilated into tubes about two and one-half centimetres in circumference. The wall is thickened and the mucous membrane is very much reddened. Both ureters contain thick yellow pus. The dilatation continues up to and into the pelves of the kidneys.

The left kidney measures 13½ by 7 by 5½ centimetres. The kidney is very large and very soft, having almost a fluctuating feel. It is somewhat irregular in shape. The capsule strips readily, leaving a fairly smooth but lobulated surface, which is mottled purple red and gray.

It is dotted with irregular opaque yellow points and areas which measure from one to ten millimetres in diameter. The largest ones are quite soft. On section, the pelvis and many of the calyces are enormously dilated, and all are filled with stringy yellow pus. At times the dilated spaces reach within one and one-half centimetres of the surface, in which event the kidney substance appears as a gray or red line destitute of normal markings and dotted with yellow points. In other places the cortex and medulla vary from one to three centimetres in thickness. In these portions the medullary pyramids are swollen, reddish, and ill defined from the cortex. The cortex is very irregular; it measures from five to ten millimetres in thickness. Sometimes the triæ are fairly well marked and the glomeruli stand out as red points. In these areas the cortex has a general red look. In other places the markings of the cortex are lost, and the kidney shows extreme red and yellow mottling, while opaque, yellow streaks extend from the medullary pyramids into the cortex. The wall of the pelvis and calyces are much thickened, reddened, and in places covered with soft yellow material.

The right kidney measures 13 by 12 by 5½ centimetres. It is much softer than tne left, has a more nodular appearance, and feels much like a thick-walled cyst. The surface is paler, and shows many more of the soft yellow areas. On section the pelvis and calyces are so much dilated that very little of the kidney substance remains, and almost none that retains its normal markings.

Many of the calyces end in abscesses, the wall of which reaches within two or three millimetres of the surface and is covered with thick, tenacious, yellow pus. Adrenals are apparently normal. Pancreas, stomach, and œsophagus apparently normal. Intestines are apparently normal.

Aorta fairly smooth.

Testes are apparently normal but rather soft.

The spine from the sacrum to the fourth cervical vertebra is removed *en masse*. At the level of the twelfth dorsal or first lumbar vertebra there is a slight deformity. The body of the last dorsal vertebra is small and compressed, and the spine curves somewhat forward and to the left side. Over the lamina there are bony exostoses which fill almost entirely the space between the spinous processes and lateral processes. On sawing through the laminæ and exposing the cord it is seen to be rather small, except just beneath the deformity, where there is a hard, irregular swelling about the size of one's thumb-nail. Here the dura mater is adherent to the bony canal.

Brain. The skull immediately beneath the wound in the scalp shows a ragged round opening two centimetres in diameter. On the inner surface of the temporal bone the inner table is somewhat torn. There is extensive hæmorrhage beneath the dura mater and also beneath the pia mater in places. Corresponding to the hole in the scalp and dura beneath it there is a large tear in the substance of the brain which involves the fissure of Sylvius about four centimetres anterior to the foot of the fissure of Rolando. About it there is an extensive hæmorrhage beneath the pia mater. In the superficial portion of the laceration, a piece of bone two centimetres in length, one centimetre in width, and one-half centimetre in thickness together with a small mass of lead is found. On the median surface of cerebrum a second laceration is found midway between the fornix and the surface of cortex and five centimetres back of anterior point of fornix. The falx cerebri is perforated by an opening one centimetre in diameter, the perforation corresponding exactly with the situation of the laceration in cerebrum. The left hemisphere shows two lacerations, one on the inner surface and the other on the cortex; they are only two and one-half centimetres apart. Embedded in the brain substance on left side just below the pia mater there is a small piece of lead; it lies in the foot of the postcentral lobe one and one-half centimetres above the fissure of Sylvius.

Anatomical Diagnosis. Double pyelonephrosis; chronic cystitis; calculus of prostatic urethra; old fracture of last dorsal and first lumbar vertebræ; laceration of brain by a leaden bullet.

Dr. John B. Roberts described briefly a similar case upon which he recently had operated. The patient had attempted suicide and was unconscious when seen. Marked exophthalmos was present; it being readily surmised that the bullet had passed just behind the orbits and that the cavities were probably filled with blood. The skull was trephined at the point of entrance of the bullet and fragments of bone and a great deal of blood were removed. On the opposite side of the head was an increasing swelling of the scalp, which, when opened, showed that the bone was broken but not perforated by the bullet which had passed through the brain. The bullet had caromed and was found in the brain one and one-half inches posterior and below the wound in the skull. The patient had lost a great deal of blood and soon afterwards died.

PULMONARY COMPLICATIONS FOLLOWING ABDOMINAL OPERATIONS.

Dr. R. P. McReynolds said that in looking over a series of 100 cœliotomies in order to determine the frequency of postoperative pulmonary complications, he had found two cases of bronchopneumonia, one of bronchitis, one of abscess of lungs, and three of pleurisy. The case of bronchitis followed an operation for mistaken perforation of a typhoid fever ulcer, and may possibly have been due more to the fever than to the operation. It was of short duration, and the patient made an uneventful recovery from the bronchitis, the typhoid fever, and the operation. The cases of pleurisy have been of the simple plastic variety, and were easily cured by strapping the affected side with adhesive plaster. He gave brief histories of the other cases:

Case I. (*Bronchopneumonia following Hysterectomy for Uterine Fibroid.*)—Operation, August 12, 1902; ether anæsthesia. Mrs. P., aged thirty-five years, sought relief from pain and hæmorrhage caused by a small uterine fibroid. He hesitated to do a radical operation upon her because of a tubercular family history and an undoubted latent tubercular foci in her own lungs. An attempt was made to relieve her by dilating and curetting the uterus, but this was a complete failure, and one year later he was forced to do a hysterectomy. The day following the operation she began to cough and temperature suddenly went up to $101^2/_5$° F.; during the next three days there gradually developed a typical bronchopneumonia of left lung. Frequent examinations of the sputum failed to demonstrate the presence of tubercular bacilli. She made a slow recovery, and left the hospital still suffering from a slight hacking cough. Sixteen months after the operation she died from pulmonary tuberculosis. There were no abdominal complications throughout. The ether and the Trendelenburg position were probably the cause of the pneumonia.

Case II. (*Bronchopneumonia following Double Salpingo-*

oöphorectomy for Bilateral Tubo-ovarian Abscess.)—Operation, November 28, 1903; ether anæsthesia. Glass drainage.

The temperature began to go up immediately after the operation, and the following day it was 103° F., and there were present the physical signs of bronchopneumonia of right lung. The coughing caused the through-and-through abdominal stitches to cut out, which retarded her convalescence somewhat. She, however, made a good recovery and is perfectly well to-day. The patient had developed a slight cough (which had been overlooked) the day before the operation. The pneumonia resulted probably from the inspiration of some foreign substance into the lungs at a time when their resisting forces were impaired.

CASE III. (*Opening and Draining Abdominal Abscess caused by Perforation of Typhoid Fever Ulcer.*)—Operation, March 23, 1902; Chloroform anæsthesia. The convalescence in this case was normal up to the second week, when he developed a slight cough, and a little later there were present physical signs of consolidation of right base. Frequent punctures with aspiration-needle into the pleural cavity and the lung substance itself failed to locate the pus, which finally ruptured into a bronchial tube and was coughed and spit up. He made a tedious but perfect recovery and is strong and well to-day. No abdominal complications throughout, wound granulated and healed normally.

The numerous lymphatics running along the psoas muscle enable the infection to travel upward towards the diaphragm; it is then conveyed to the lungs through the blood current and there forms a foci of infection, around which an abscess gradually develops (metastatic pneumonia).

In these cases were illustrated the most frequent causes of postoperative pneumonia, *i.e.*, the irritating effect of ether itself; the inspiration of foreign substances during etherization; septic emboli.

Other causes are, exposure and wetting during an operation; prolonged use of Trendelenburg position and the forced retention of the intestines upon the diaphragm; intravenous injection of normal salt solution.

To prevent chilling during the operation the electric pad laid over the operating table has been recommended. It is theoretically all right, but practically it is worse than useless, and he mentioned it in order to condemn its use. In prolonged abdominal operations